CLAIMS

1. A system for supervising the speed of at least one engine of an aircraft, said system (1) comprising,

- a first and a second information source (3, 4) determining first and second values of at least one predetermined aerodynamic parameter of the aircraft; and
- at least one unit (5) for supervising said engine (2), comprising:
  - at least one means of regulation (6) for acting on the speed of the engine (2) as a function of control orders received;
  - at least one sensor (7) which is able to measure a fourth value of said aerodynamic parameter, on said engine (2); and
  - a computation unit (8) which is connected to said first and second information sources (3, 4), to said means of regulation (6) and to said sensor (7), which receives said first, second and fourth values of said aerodynamic parameter, which takes them into account so as to select a value of said aerodynamic parameter as control value, and which uses the control value thus selected at least to determine a control order which is transmitted to said means of regulation (6),

wherein

- said system (1) furthermore comprises:
  - a third information source (9) determining a third value of said predetermined parameter; and
  - an information transmission network (12), to which are linked said first, second and third information sources (3, 4, 9) and said computation unit (8) allowing transmission of

information between said information sources (3, 4, 9) and said computation unit (8);

- said first, second and third information sources (3, 4, 9) are independent of one another;
- said first, second and third information sources (3, 4, 9) respectively determine first, second and third correctness information indicating the correctness respectively of said first, second and third values of said aerodynamic parameter; and
- said computation unit (8) selects said control value by using said first, second, third and fourth values of the aerodynamic parameter, as well as said first, second and third correctness information.

2. The system as claimed in claim 1, wherein, to select the control value, the computation unit (8) gives priority to the values of said information sources (3, 4, 9) with respect to said fourth value of the sensor (7), it chooses said fourth value only in case of lack of agreement between all the values, and it uses said correctness information at least to resolve any ambiguities.

3. The system as claimed in either of claims 1 and 2, wherein said computation unit (8) uses as control value:

1/ if said fourth value of the sensor (7) is not valid:

A/ if said first, second and third values of said first, second and third information sources (3, 4, 9) are valid and are in agreement, said first value of said first information source (3);

B/ otherwise:

α) if two of said first, second and third values are valid and are in agreement and if the product of the two corresponding items of correctness information is equal to 1, a correctness item equaling 1 if the corresponding

value is apparently correct and 0 otherwise, the lower value of said two values in agreement;

β) otherwise:

a) if one of said first, second and third values is valid and if the corresponding correctness item equals 1, this value which is valid;

b) otherwise, a predetermined value; and

2/ if said fourth value is valid:

A/ if one of said first, second and third values is valid and is in agreement with one other of them, as well as with said fourth value, this value in agreement;

B/ otherwise:

α) if two of said first, second and third values are valid and are in agreement and if the product of the two corresponding items of correctness information is equal to 1, the lower value of said two values in agreement;

β) otherwise:

a) if one of said first, second and third values is valid, if it is in agreement with said fourth value and if its correctness item equals 1, this value which is valid;

b) otherwise, said fourth value of the sensor (7).

4. The system as claimed in claim 3, wherein two values are in agreement when their difference is less than a predetermined threshold value.

5. The system as claimed in either of claims 3 and 4, wherein a value is valid when it lies between two predetermined limit values.

6. The system as claimed in any one of the preceding claims,

wherein said computation unit (8) carries out a weighting upon a change of selection of value for the control value.

7. The system as claimed in any one of the preceding claims,
wherein said computation unit (8) is disconnectable as regards the selection of the control value.

8. The system as claimed in any one of the preceding claims,
wherein said computation unit (8) receives said fourth value on two different channels, and uses the two values thus received.

9. The system as claimed in any one of the preceding claims, for supervising the speeds of the engines (2A, 2B, 2C, 2D) of an aircraft fitted with a plurality of engines (2A, 2B, 2C, 2D),
which comprises, for each engine (2A, 2B, 2C, 2D) whose speed it supervises, a specific supervising unit (5A, 5B, 5C, 5D) comprising a means of regulation (6), a sensor (7) and a computation unit (8).

10. The system as claimed in claim 9,
wherein each of said information sources (3, 4, 9) receives from all the supervising units (5A, 5B, 5C, 5D) the fourth values measured by the sensor (7) of each of said supervising units (5A, 5B, 5C, 5D) and determines its correctness item from these fourth values.

11. The system as claimed in claim 10,
wherein, to determine its correctness item, each information source (3, 4, 9):
- computes all the differences between said fourth values and its value of said aerodynamic parameter;
- compares the differences with a predetermined threshold value; and

- deduces therefrom:
  - if at least half of said differences are below said threshold value, that said correctness item equals 1;
  - otherwise, that it equals 0.